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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/750,687

12/31/2003

Ju Ho Kim

11037-164-999

2204

24341

7590

09/08/2005

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EXAMINER

SCHWARTZ, CHRISTOPHER P

ART UNIT

PAPER NUMBER

3683

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/750,687

Applicant(s)

KIM, JU HO

Examiner

Christopher P. Schwartz

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,4,5 and 8-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,4,5 and 8-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

CHRISTOPHER P. SCHWARTZ  
PRIMARY EXAMINER

### **DETAILED ACTION**

1. Applicant's response filed 6/1/05 has been received and considered. Claims 2,4,5,8-12 are pending in the application.

#### ***Information Disclosure Statement***

2. Applicant's information disclosure statement has been received and considered.  
*It is unclear to the examiner why this IDS is being filed so late in the game.*

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8,2,5,9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jolly et al. in view of Gordaninejad et al. ('018) and the Japanese publication to '189, Lin et al. and Ide et al. or Ratu et al.

Regarding claims 8,2, as discussed previously, Jolly et al. discloses in the several embodiments, and in particular figure 6a, a shock absorber having a piston 26f, a magnetic field generating unit (32f, 32f', 32f'') comprising a plurality of ring shaped "unit magnets", as broadly claimed, mounted on an interior side of the cylinder 22f.

Jolly et al. Lacks showing the particular configuration of the ring shaped magnets and discussing what type of material the internal side of the cylinder is formed from.

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Note that Jolly shows magnetic field lines or the magnetic flux, having portions that are perpendicular to the travel path of the piston. Also, note that the change in rheology of the fluid creates a force therein to counter the direction of movement of the piston, as per applicant's. Jolly et al. Also lacks showing the springs and the rubber member, as claimed.

The reference to '018 in the description of figure 7, and in column 8, states that the cover/housing 1,16 can be formed using either ferrous or non-ferrous materials.

This reference also discloses at the bottom of col 8 that MRF fluid that passes through the piston (i.e. in the same direction of motion of the piston) is perpendicular to the magnetic field. Note that this reference can also use permanent magnets to generate the magnetic field.

The Japanese publication to '189 shows a magnetic field generating unit in figure 4 having a the poles oriented substantially to that claimed.

The reference to Lin et al. (previously relied upon) shows the known use of springs to supplement the absorbing action of the permanent magnets. The references to Ide et al. or Ratu et al. are only relied upon to show it is known to interchange coil springs or, in some instances, to supplement the action of coil springs with elastomeric ones dependent upon the damping characteristics desired—or to reduce or eliminate unwanted noise created by the action of the coil springs.

One having ordinary skill in the art at the time of the invention would have found it obvious to have formed the cylinder of Jolly et al. from a "metallic material with relatively high electrical conductivity" dependent upon such well known factors as cost,

material availability, weight and/or magnetic field characteristics desired. To have adapted or modified the piston and magnet arrangement of Jolly, such that the magnetic field generated is substantially perpendicular to a direction of motion of the piston (as it already appears to be in Jolly) is further suggested by the reference to Gordaninejad et al. ('018) and the Japanese publication to '189 and would have been obvious simply as an alternative magnetic ring arrangement dependent upon cost, availability of types of permanent magnets etc. Applicant lacks criticality in the specification for the claimed arrangement.

Regarding claim 5, in view of the modification above, the choice of copper would simply be an obvious choice of materials to the ordinary skilled worker in the art.

Regarding claim 9 note the spring arrangement taught by Lin et al. It is known in the art to add springs to supplement or adjust the damping characteristics of the absorbers upon specific applications.

One having ordinary skill in the art at the time of the invention would have found it obvious to have provided the device of Jolly et al. with a spring arrangement between the piston and the gas spring, as generally suggested by Lin et al., dependent upon the spring characteristics desired from the device for a specific application.

5. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jolly et al., as modified by '018 and JP '189, as applied to claim 1 above, and further in view of Knapp.

Regarding claim 10 although Jolly et al, as modified, lacks a rotation restricting means, such idea is taught by Knapp. See column 8 beginning around line 42.

To maintain axial alignment of the piston of Jolly et al. one having ordinary skill in the art at the time of the invention would have found it obvious to have provided the piston/cylinder with a rotation restricting means, as taught by Knapp, dependent upon the specific application for the device.

Regarding claims 11 and 12 these limitations are simply an alternate equivalent to the arrangement taught by Jolly et al. as further modified by Knapp.

6. Claims 8,5,9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordaninejad et al. in view of JP '189 and Lin et al. and Ide et al. or Ratu et al.

Regarding claim 8 Gordaninejad et al. discloses in column 8 and in figure 7 all the features required except for the specifics of the metallic material from which the cylinder and/or piston is made. Note the possible various arrangement of permanent magnets discussed therein.

Gordaninejad et al. Lacks showing the particular configuration of the ring shaped magnets.

However, in light of the discussions in columns 6 and column 8, the ordinary skilled worker at the time the invention was made would have found it obvious to have made the cylinder or piston from a material with relatively high electrical conductivity dependent upon such well known factors as cost, weight and/or magnetic field characteristics desired. Further, it would have been obvious to one having ordinary skill in the art to have oriented the magnetic ring or electromagnetic coil arrangement to that claimed simply as an alternative magnetic ring or electromagnetic coil arrangement dependent upon such well known engineering factors as cost, weight, power

consumption, heat generation, availability of specific types of permanent magnets etc.  
Applicant lacks criticality in the specification for the claimed arrangement.

Please also refer to the discussion on line 20 of column 8 and the last paragraph of column 8 regarding the direction of the magnetic field.

Regarding claim 5 the choice of copper would simply be an obvious choice of materials to the ordinary skilled worker in the art dependent upon weight, cost or magnetic characteristics desired from the damper.

Regarding claim 9 note the spring arrangement taught by Lin et al.  
One having ordinary skill in the art at the time of the invention would have found it obvious to have provided the device of '018, as modified with a spring arrangement between the piston and the cylinder as generally suggested by Lin et al., dependent upon the spring characteristics desired from the device for a specific application.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over '018, in view of JP '189 and Lin et al. and Ide et al. or Ratu et al. , as applied to claim 8 above, and further in view of Lisenker.

Regarding claim 4 as discussed in col 6 '018, as modified, does not require the piston to be material specific for the device to function.

Lisenker states at the bottom of column 4 that the piston may be with copper elements at 32,42.

Dependent upon the magnetic field strength/characteristics desired one having ordinary skill in the art at the time of the invention would have found it obvious to have formed an exterior part of the piston of '018, of copper, as taught by Lisenker.

8. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over '018 in view of JP '189 and Lin et al. and Ide et al. or Ratu et al. as applied to claim 8 above, and further in view of Knapp.

Regarding claim 10 although '018, as modified, lacks a rotation restricting means, such idea is taught by Knapp. See column 8 beginning around line 42.

To maintain axial alignment of the piston of '018 one having ordinary skill in the art at the time of the invention would have found it obvious to have provided the piston/cylinder of '018 with a rotation restricting means, as taught by Knapp, dependent upon the specific application for the device.

Regarding claims 11 and 12 these limitations are simply an alternate equivalent to the arrangement taught by '018 as modified by Knapp.

### ***Conclusion***

9. The prior art of record has been cited for showing known types of dampers. Applicants should review the prior art of record submitted on their most recent IDS for what is well known to the ordinary skilled worker in the art in the way of permanent magnet shock absorbing structures. The prior art references to Sandrin (see figures 22+), Yoshida and Yamoaka et al. also should be reviewed as they also help to establish the examiners conclusions of obviousness above.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Schwartz whose telephone number is 571-272-7099. The examiner can normally be reached on M-F 9:30-6:00.

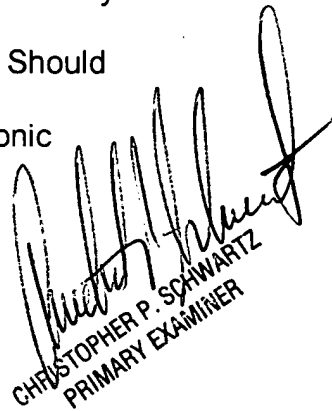


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11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chuck Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cps  
8/20/05



CHRISTOPHER P. SCHWARTZ  
PRIMARY EXAMINER